

200

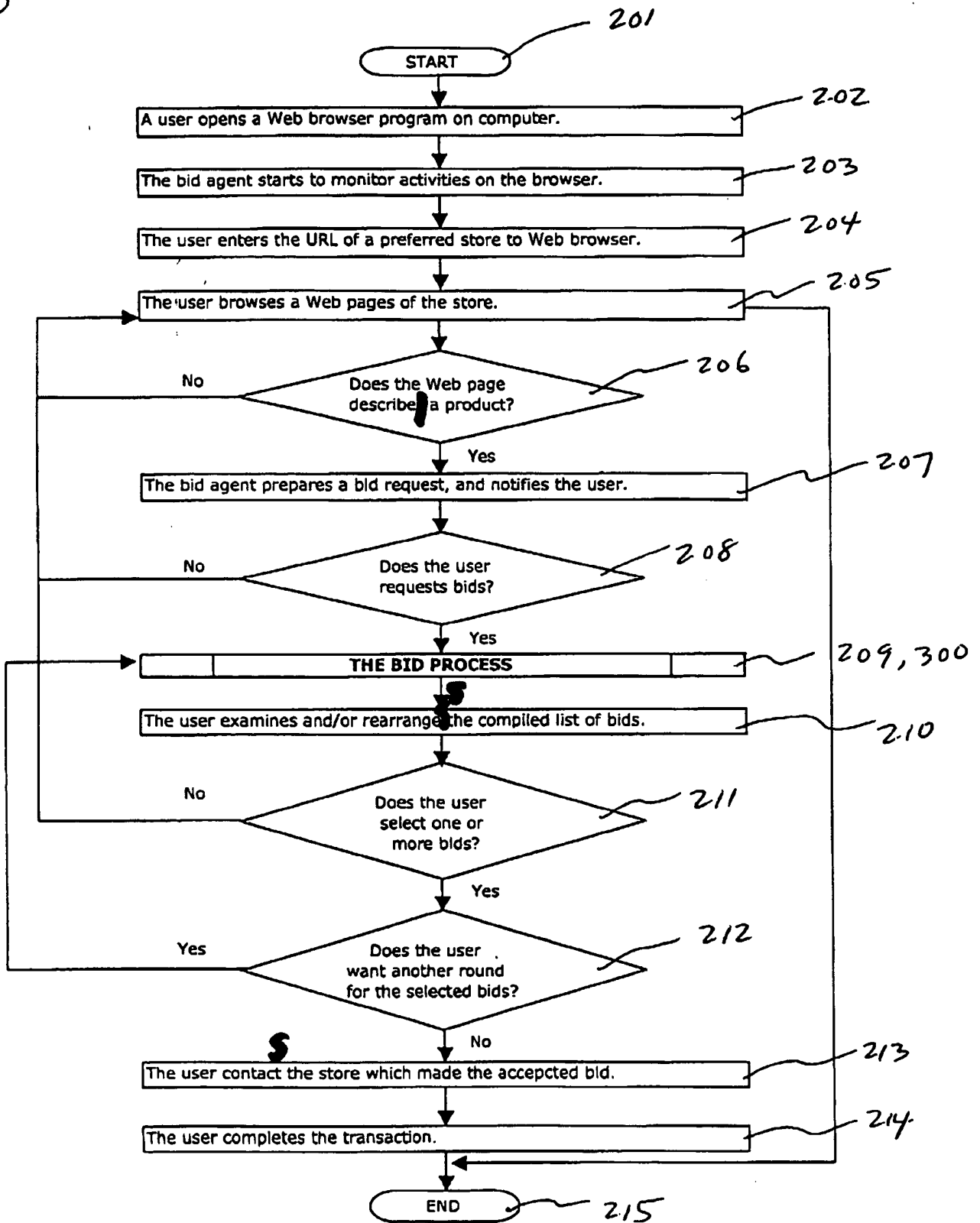


Figure 2 A flow chart of the business process

300

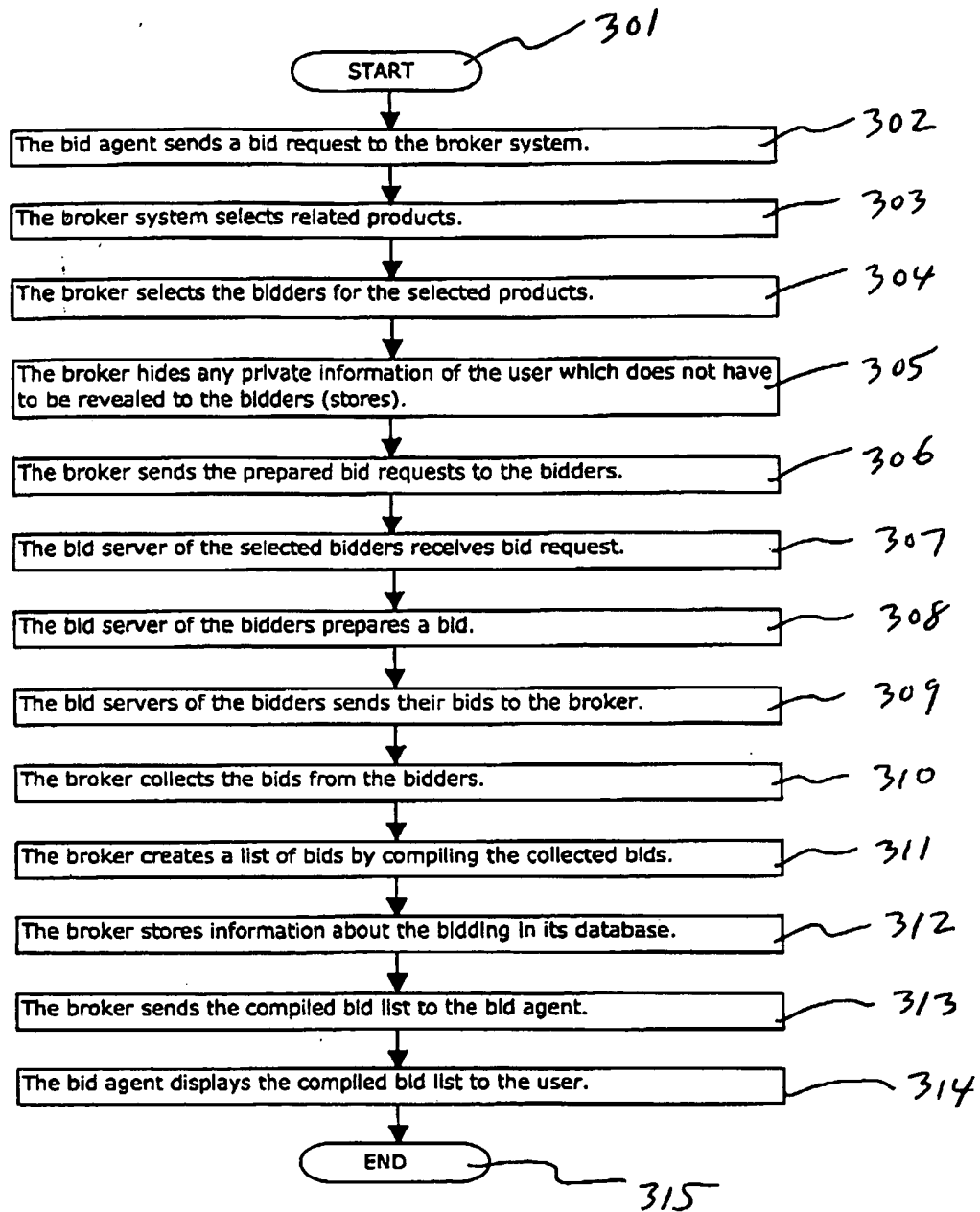


Figure 3 A flow chart of the bid process

400

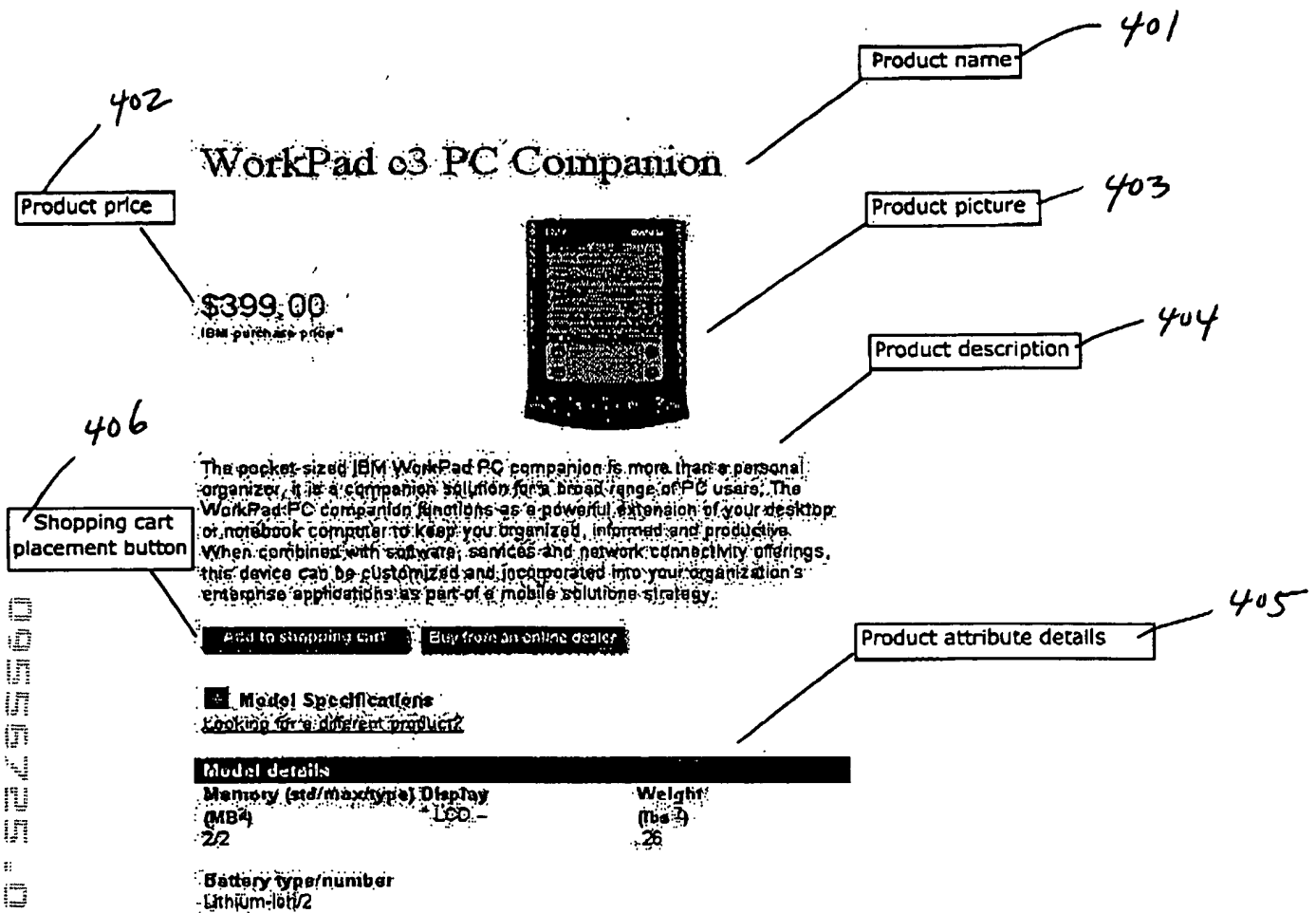


Figure 4 A screen image of a product page

500

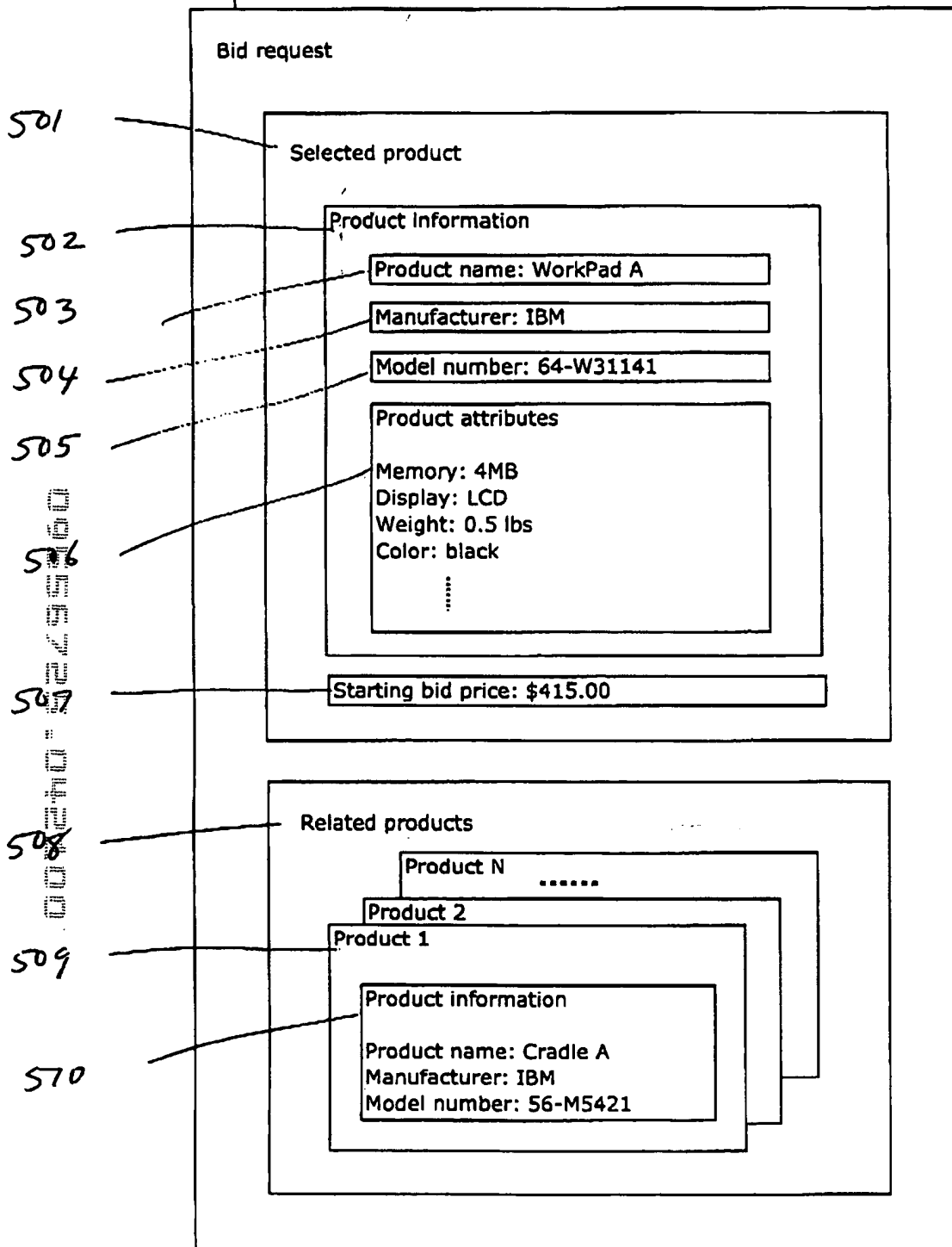


Figure 5 A block diagram of a bid request

600

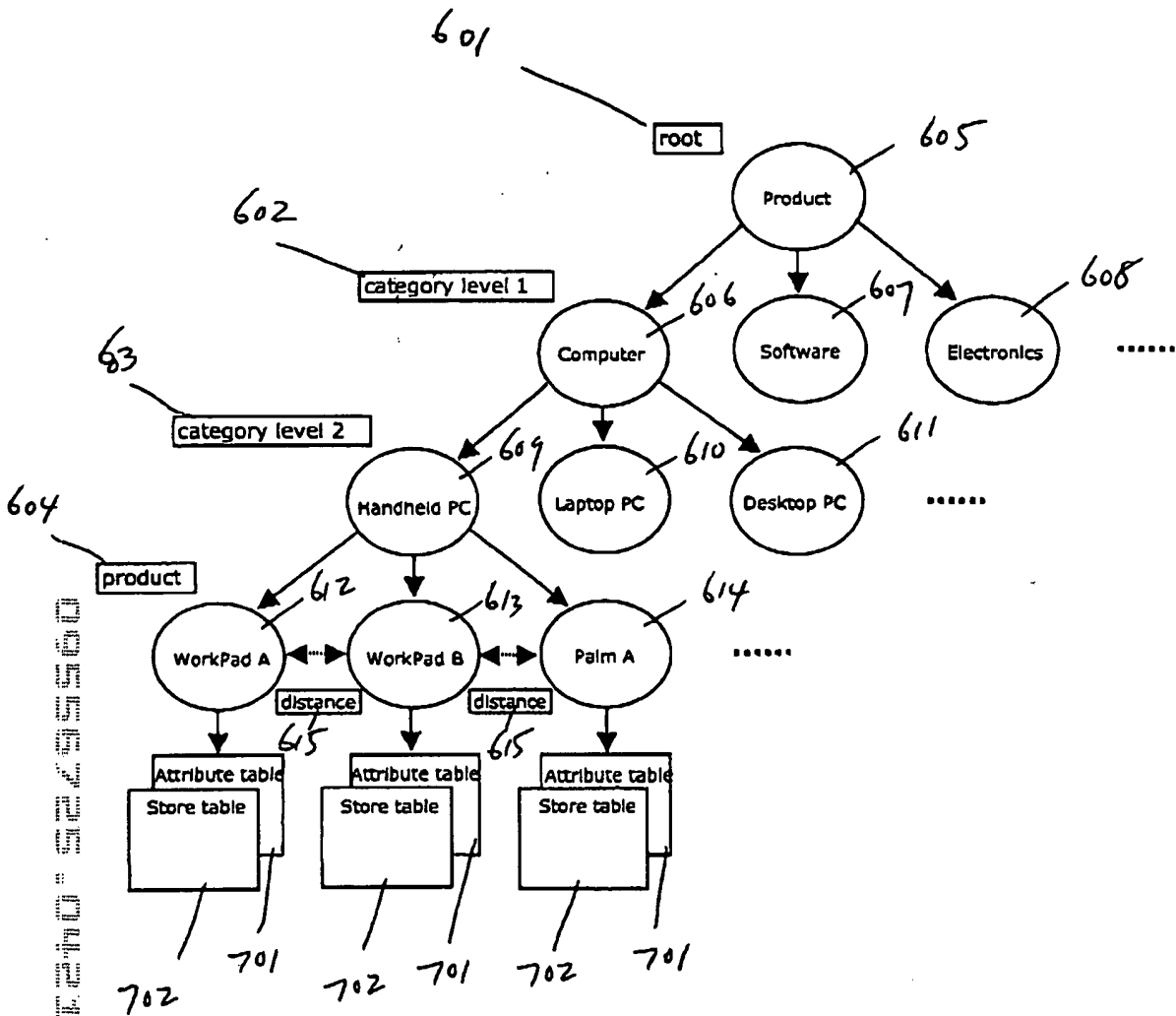


Figure 6 A sample product ontology

001210 = 2163333

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Attribute name	Attribute value
Name	WorkPad A
Manufacturer	IBM
Model number	64W31141
UPC	516-8473
Memory	4 MB
Display	LCD
Weight	0.5 lbs
Battery	Alkaline 2/AAA
Color	black
...	...

(a) Attribute table of WorkPad A

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Store number	Store name	Availability last checked	Bid last participated	Bid last accepted	Attribute	Homepage
1	foo.com	25-Jan-00	25-Jan-00	25-Jan-00	N/A	www.foo.com
2	bar.com	25-Jan-00	25-Jan-00	24-Jan-00	Discount for shopper group A	www.bar.com
3	acme.com	25-Jan-00	24-Jan-00	24-Jan-00	N/A	www.acme.com
4	peddler.com	12-Nov-99	10-Nov-99	25-Sep-99	Group C shoppers only	www.psd.com

(b) Store (Bidder) table of WorkPad A

Figure 7 Attribute table and store table of a product

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Store	Product	Bid price	Web page for purchase	Shipping options	Total cost	Tax state
foo.com	WorkPad A	\$345.00	www.foo.com/c3/buy.html	USPS Parcel Post \$3.90	\$348.90	NY
				UPS 2nd Day Air \$7.90	\$352.90	
				UPS Next Day Air \$10.90	\$355.90	

(a) A bid on the selected product

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Store	Comparable products	Price	Web page for information	Web page for purchase
foo.com	WorkPad B	\$299.00	www.foo.com/wp.html	www.foo.com/wp/buy.html
	WorkPad C	\$799.00	www.foo.com/z50.html	www.foo.com/z50/buy.html
	Palm A	\$309.99	www.foo.com/palmv.html	www.foo.com/pv/buy.com
	Palm B	\$238.99	www.foo.com/palmtx.html	www.foo.com/px/buy.com

(b) Bids on comparable products

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Store	Additional services available	Web page for information
foo.com	Express checkout	www.foo.com/1c.html
	Add to wish list	www.foo.com/wish.html
	Build-to-order service	www.foo.com/bto.html
	Reward program	www.foo.com/rew.html

(c) Available services for a purchase

Figure 8 A sample bid and associated conditions

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903 904 905 906 907 908 909

Store	Bid price	Shipping	Total cost	Tax	Purchase link	Additional services
foo.com	\$345.00	USPS Parcel Post \$3.90 UPS 2nd Day Air \$7.90 UPS Next Day Air \$10.90	\$348.90 \$352.90 \$355.90	NY	www.foo.com/c3/buy.html	One-click checkout Add to wish list Build-to-order service Reward program
bar.com	\$339.99	Free shipping & handling	\$339.99	CT	www.bar.com/c3/buy.html	N/A
acme.com	\$375.00	USPS Parcel Post \$3.95 FedEx Two Day \$7.95 FedEx Overnight \$10.95	\$378.95 \$382.95 \$385.95	NJ	www.acme.com/c3/buy.html	Express checkout Reward program Discount for educational shoppers

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(a) A compiled bid list for the selected product

910 911 912 913 914

Product	Store	Price	Product information link	Purchase link
WorkPad B	foo.com acme.com	\$299.00 \$315.00	www.foo.com/vp.html www.acme.com/vp.html	www.foo.com/wp/buy.html www.acme.com/vp/buy.html
WorkPad C	foo.com acme.com	\$799.00 \$795.00	www.foo.com/z50.html www.acme.com/z50.html	www.foo.com/wp/buy.html www.acme.com/z50/buy.html
Palm A	foo.com bar.com acme.com	\$309.99 \$299.00 \$319.00	www.foo.com/pv.html www.bar.com/pv.html www.acme.com/pv.html	www.foo.com/wp/buy.html www.bar.com/pv/buy.html www.acme.com/pv/buy.html
Palm B	foo.com bar.com acme.com	\$238.99 \$219.00 \$249.99	www.foo.com/px.html www.bar.com/piix.html www.acme.com/piix.html	www.foo.com/wp/buy.html www.bar.com/piix/buy.html www.acme.com/piix/buy.html
Casio Pela A	foo.com bar.com	\$199.99 \$190.00	www.foo.com/ca.html www.bar.com/casio.html	www.foo.com/wp/buy.html www.bar.com/casio/buy.html
Palmtop A	acme.com	\$534.99	www.acme.com/pt360.html	www.acme.com/pt360/buy.html

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(b) A compiled bid list for comparable products

Figure 9 A sample bid list

1000

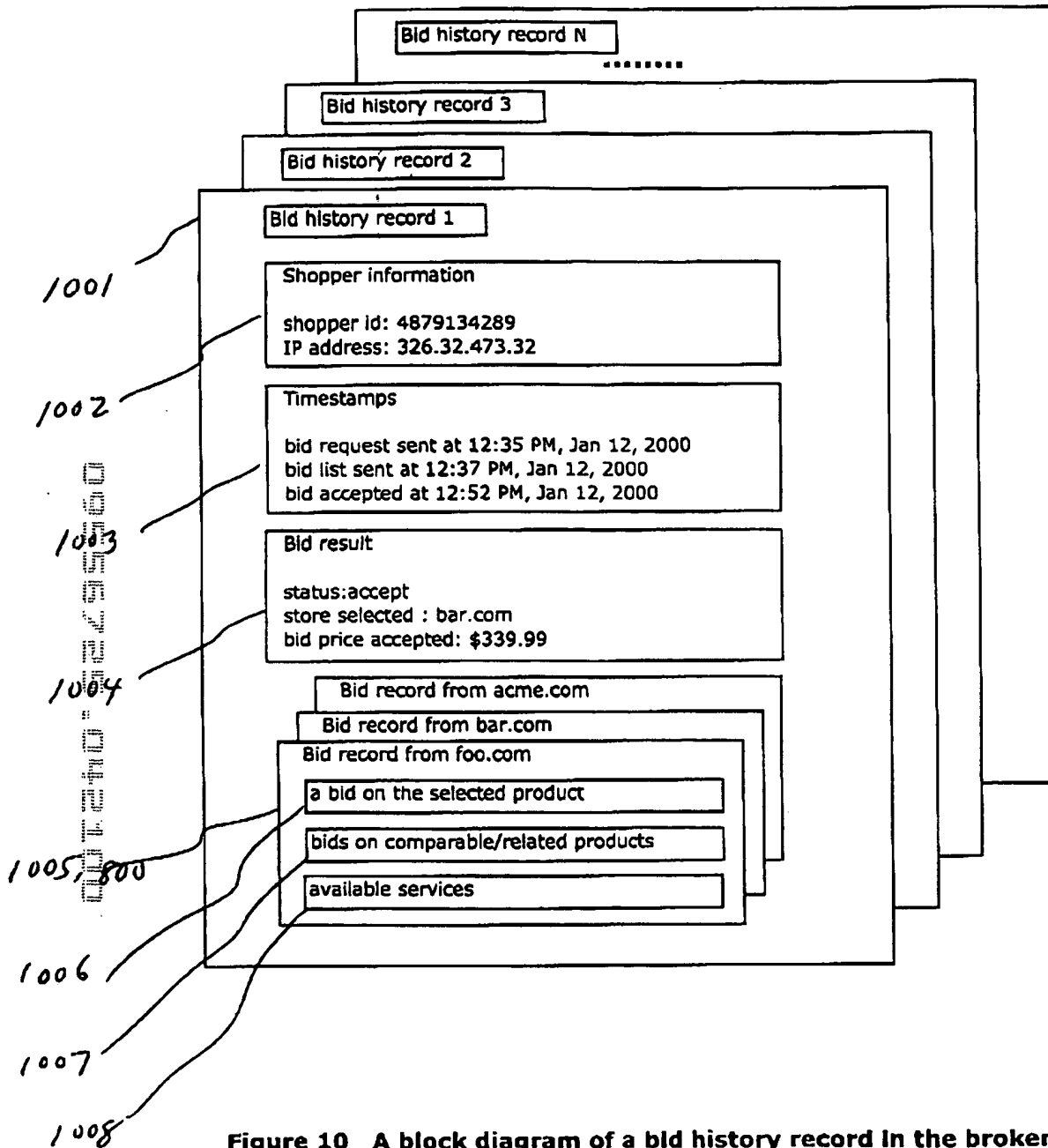


Figure 10 A block diagram of a bid history record in the broker system

1010

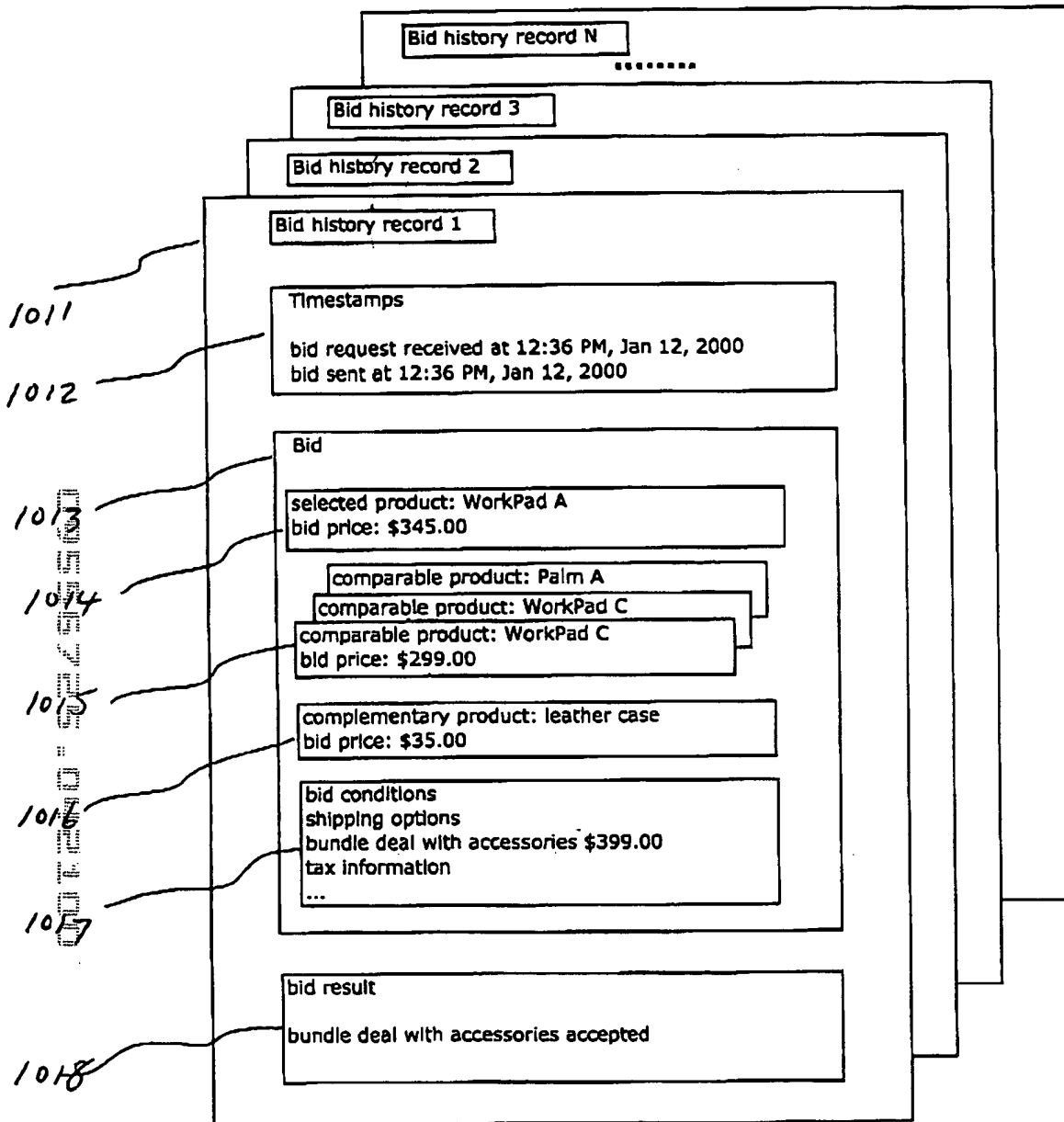


Figure 11 A block diagram of a bid history record in a bid server